

# Dr. SEBASTIAN KRIEGER

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- About • I solve complex problems using data, algorithms, and a combination of technical expertise, problem-solving skills and intuition. Whether improving existing systems or developing new solutions, I approach every challenge with curiosity, creativity, and precision. As a seasoned researcher and data expert, I specialize in optimizing data workflows and applying machine learning, artificial intelligence, and numerical modeling to real-world challenges. My expertise spans a range of domains, including data analysis, ocean hydrodynamic modeling, satellite remote sensing, and software development.
- Research background • Ph.D. in Physical Oceanography, focusing on global ocean dynamics using satellite altimetry.
- Postdoctoral research in near-shore ocean observation, ocean color satellite remote sensing, and hydrodynamic and bio-physical numerical modeling.
- Core expertise • *End-to-end data management*: Design and implement data workflows, including ETL pipeline development, data curation, and integration.
- *Machine learning & AI*: Build and deploy production-ready machine learning models for data generation, predictive analytics, and quality control.
- *Technical leadership*: Lead data-driven projects and mentor junior colleagues, fostering their professional growth.
- *Communication*: Distill complex technical findings into clear, actionable insights for diverse stakeholders.
- *Collaboration*: I enjoy and have experience working with multidisciplinary and cross-cultural teams, both remotely and in-person.
- *Software development best practices*: Including test-driven development (TDD), clean code, data governance, and agile methodologies.
- *Open to relocation*: As a dual Brazilian and an EU citizen, I am available for relocation opportunities within Europe and beyond.
- Language skills • Fluent in English and Portuguese.
- Conversational fluency in French, German, and Spanish.
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## SELECTED WORK & RESEARCH EXPERIENCE

2018–present **Bloomberg**

São Paulo, SP

### ***Senior data scientist / data engineer***

Led the design, implementation, and maintenance of 30+ data workflows and ETL pipelines for financial data products, processing millions of records daily and ensuring seamless delivery to clients, with a special focus in Latin America • Developed and deployed custom machine learning models to forecast economic trends, predict financial conditions, and detect anomalies • Conducted research to expand data product capabilities and enhance analytical features, contributing to the continuous evolution of financial data solutions • Collaborated on public outreach programs, educating clients and students on data science and analytics, while reinforcing Bloomberg's brand presence • Mentored colleagues in best practices for computer programming and data analysis, conducting one-on-one or group training sessions. Supported journalists and business stakeholders with data-driven research and analysis to drive strategic insights.

2016–present **nublia**

São Paulo, SP

***Solo data science and technical consultant, online lecturer*** (concurrent with other activities)

Designed and implemented ETL pipelines to integrate and process large datasets, ensuring efficient and accurate data flow • Applied machine learning and data science techniques to drive business growth and innovation, including customer segmentation models and click-through rate forecasting • Developed data science and analytics training programs, training cohorts of 20+ technical professionals seeking to enhance their skills.

2014–2016 **Centro de Biologia Marinha, Universidade de São Paulo**

São Sebastião, SP

***Postdoctoral research fellow***

Collected and analyzed data through *in situ* field measurements for various research projects, including the SIMCosta mooring network project, enhancing the understanding of coastal dynamics • Managed and analyzed biogeochemical datasets using data mining and time-series analysis techniques for the Biota/FAPESP Araçá project, providing insights into ecosystem health and function in the Araçá Bay • Designed and implemented a MySQL database for the storage, management, and retrieval of georeferenced data, supporting research initiatives • Developed coupled numerical models integrating hydrodynamics and phytoplankton growth processes to simulate and analyze ecosystem dynamics in marine environments • Taught and mentored graduate and undergraduate students through lectures on data analysis and numerical modeling • CAPES fellow.

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EDUCATION	2009–2014	Sc.D. Physical Oceanography <i>Instituto Oceanográfico, Universidade de São Paulo</i> Thesis title: Mesoscale eddies, Rossby waves and the spectra from altimetry data.
	2008–2009	Pg.C. Ocean Observatories <i>Bermuda Institute of Ocean Sciences</i> Thesis title: Nutrient pumping induced by first mode baroclinic Rossby waves in the Sargasso Sea.
	2006–2008	M.Sc. Physical Oceanography <i>Instituto Oceanográfico, Universidade de São Paulo</i> Thesis title: Spectral variability distribution of baroclinic Rossby waves in the Atlantic Ocean and particularly in the region of the Abrolhos archipelago.
	2000–2004	B.Sc. Physics <i>Instituto de Física, Universidade de São Paulo</i>

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TECHNICAL SKILLS	Open source	<b>pycwt</b> : Free and open source Python module for spectral analysis and statistical significance tests using the continuous wavelet transform (CWT).
	Data analysis	Data mining, dynamical systems, K-nearest neighbours, multi-variate linear and logistic regressions, artificial neural networks, principal component analysis, data visualization, wavelet and Fourier spectral analysis.
	Computer programming	Python, MATLAB/Octave, SQL, Visual Basic.
	Databases	Design and management of PostgreSQL, MySQL/MariaDB, SQLite databases.

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OTHER INTERESTS	Volunteering	Online mentor to early-career scientists and post graduate students in marine and aquatic sciences through the <b>Trevor Platt Science Foundation</b> since 2022. • English tutor to young people and adults from public schools in Brazil as part of <i>Cidadão Pró-Mundo</i> since 2019.
	Rowing	National and continental rowing umpire accredited by <i>Confederação Brasileira de Remo</i> (CBR) and <i>Confederación Sudamericana de Remo</i> (CSAR).
	Hobbies	Woodwork, sourdough bakery, cycling, music (guitar, bansuri flute).